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January 27, 2009

Ms. Erin Rednour
Illinois Environmental Protection Agency
Federal Sites Management Unit
Bureau of Land, MC-24
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Re: Technical Memorandum: Soil Investigation Report
Jennison-Wright Superfund Site
11090400008–Madison Co.
Jennison-Wright/Granite City
Superfund

Dear Ms. Rednour,

Ecology & Environment Engineering, Inc. (EEEI) is pleased to provide the Illinois Environmental Protection Agency (Illinois EPA) with this Technical Memorandum that evaluates the analytical results from the soil investigation performed at the Jennison-Wright (JW) Superfund site located in Granite City, Illinois. The purpose of this investigation was to further determine the nature and extent of soil contamination and identify areas that may require additional remediation and/or implementation of institutional controls.

Three areas on the JW site were selected for investigation based on a review of the analytical results from soil sampling conducted as part of the 1999 Engineering Evaluation/Cost Analysis (EE/CA) and observations made during remedial activities. These previous investigations indicated off-site surface soil and subsurface soil may exceed the established cleanup objectives established in the Record of Decision (ROD) and require further evaluation. The results from the sampling will be used to characterize the impacts of potential shallow subsurface contaminant sources in areas along 22nd Street, the alley that runs parallel to the western property line, and the drainage swale in the vicinity of Area H. The soil investigation was conducted in accordance with the Field Sampling Plan (FSP) for the JW site (EEEI 2008). EEEI's field team performed the fieldwork during the weeks of November 17th and December 1st, 2008.

- **22nd Street.** The investigation of 22nd Street included collection of shallow soil samples from four (4) soil borings completed at each of the four (4) rail spurs that cross 22nd Street, for a total of 16 boring locations. This area was originally beyond the scope of the soil investigation portion of the EE/CA performed in 1999. Two (2) samples were

collected from each boring location; the first sample was collected at an approximate depth of 1 to 2 feet below ground surface (BGS) and the second sample interval was approximately 3 to 4 feet BGS. One set of duplicate samples was also collected from a pre-selected boring along 22nd Street. One additional boring was performed in the vicinity of the 22nd Street Lagoon to further delineate the extent of contamination in an area that could not be remediated due to the presence of existing utilities. Four (4) samples were collected at the boring location along the 22nd Street Lagoon at depth intervals of 1 to 2 feet BGS, 5 to 6 feet BGS, 9 to 10 feet BGS, and 15 to 16 feet BGS. A total 38 soil samples were collected from the 17 borings locations along 22nd Street.

- **West Side Alley.** Soil samples were also collected along the alley that runs parallel to the former pentachlorophenol (PCP) process area located along the western JW property line. During previous excavation activities at the PCP process area, soil contamination was encountered at depths that extended to the water table (approximately 18 feet BGS) and was assumed to extend through the alley to at least the property line adjacent to the PCP process area. Excavation of the alley was not feasible due to the presence of subsurface utilities. The investigation in the alley was performed to determine whether this area contains contamination above the cleanup objectives and to delineate the boundaries of institutional controls, if necessary. Four (4) samples were collected at each of the six (6) borings completed along the alley. Samples were collected at intervals of 1 to 2 feet BGS, 5 to 6 feet BGS, 9 to 10 feet BGS, and 12 to 13 feet BGS in order to evaluate the vertical and horizontal extent of contamination in this area.

- **Drainage Swale North of Area H.** Another area investigated at the JW site was the drainage swale located immediately north of designated Area H. Previous excavation activities have addressed most of the contamination found in Area H; however, elevated rail lines located to the east have limited removal of all contaminated soil. Nine (9) soil borings were completed along the drainage swale that runs parallel to the railroad to determine if the remaining concentrations are above the cleanup objectives and to identify the boundaries of institutional controls. One (1) shallow soil sample was collected at each boring location from a depth of 1 to 2 feet BGS using a hand auger. One duplicate soil sample was also collected in this area.

SOIL SAMPLING PROCEDURES

Soil samples were collected from 32 soil boring locations along the JW site; the locations are shown in Figure 1. A Geoprobe™ direct-push sampling device was used at all sampling locations except those along the drainage swale in the vicinity of Area H where hand augers were used for shallow sampling. Subsurface soils were collected using a 4-foot-long Macro-Core soil sampling device with polyvinyl chloride (PVC) sleeves.

Based on the site-specific cleanup objectives established for the site in the ROD, semivolatile organic compounds (SVOCs) were the main drivers of the remedial action undertaken for the

site soils. All soil samples collected were submitted to Test America (TA) Laboratories, University Park, Illinois, for SVOC Method 8270C testing. Additional samples were collected from two boring locations, one in the west side alley and the other in the drainage swale near Area H, and submitted for Dioxin testing using Method 8290 and volatile organic compounds (VOCs) analysis under Method 8260B. The duplicate sample collected at the drainage swale was also submitted for Dioxin and VOCs analysis. The sampling plan for soil is summarized in Table 1. All duplicate samples were collected simultaneously in equal volumes from the same location with the same equipment and placed into identical containers, and preserved and handled in the same manner as the original sample. All sample bottles were labeled, packaged, and placed on ice per the FSP.

At the end of each work day, the packaged samples were shipped overnight to the lab. A field-completed chain-of-custody (COC) record accompanied each sample cooler to document the transfer of custody from the field to the laboratory. Once received by the laboratory, the COC record was completed with all requested information. One copy of the COC form was retained by the sampler and placed in the project record file.

RESULTS

A total of 72 soil samples were collected at the 32 soil boring locations in the selected areas along the JW site and submitted to TA Laboratories for SVOC and PCP analysis. The Cleanup Objectives (CUOs) established in the ROD were compared to the soil sample results. Analytical results including CUOs are summarized in Table 2. Any analytical sample result that exceeds a CUO is highlighted in the table. While VOCs were analyzed for in selected soil samples, no VOC was detected at a concentration that exceeds its CUO. Therefore, the discussion of results will be limited to SVOCs and dioxin.

22nd Street

Analysis of samples collected from nine of the 17 soil borings along 22nd Street revealed concentrations exceeding the CUOs. The analytical results showed that soil concentrations in samples collected at the two westernmost spurs along 22nd Street, sample numbers SB1 through SB8, currently meet the CUOs for all compounds in soil with exception of the shallow samples from borings SB1 and SB2. The remaining boring locations along 22nd Street, SB9 through SB17, indicated concentrations exceeding the CUOs for multiple compounds. Specifically, high concentrations of benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene were detected in shallow soil samples collected from borings SB9, SB11, and SB12 at depths of 1 to 2 feet BGS.

Additionally, detected concentrations exceed the CUOs for several compounds in all four sample intervals collected at boring SB17, which is located in the vicinity of the 22nd Street Lagoon. Contamination at boring SB17 appears to increase with depth and the highest concentrations were detected in the deepest sampling interval, 15 to 16 feet BGS. PCP was

identified at boring SB17 but did not exceed the CUO. Table 2 also indicates that exceedances were present in soil samples from borings SB13, SB15, and SB16 along the railroad spur adjacent to the 22nd Street Lagoon, but only at depths of 1 to 2 feet BGS. Contamination was detected at depths up to 4 feet BGS; however, these values were well below the CUOs. In general, most contamination that was detected along 22nd Street was isolated to a depth of between 1 and 2 feet BGS.

West Side Alley

Analytical results from the samples collected at the six borings advanced along the alley running parallel to the PCP process area reveal that the soil in this area currently meets the CUOs established for the JW site. In general, low concentrations of contamination were found in the shallow samples, collected at 1 to 2 feet BGS, as shown in Table 2. SVOCs were not detected in subsurface soil samples collected at deeper intervals within the alley borings.

Dioxin was detected in soil boring SB18 at all four intervals. None of the sample results exceeded the CUOs. Results are shown in Table 2.

Drainage Swale North of Area H

Samples from two of the nine soil borings advanced along the drainage swale near Area H exceeded CUOs established for the JW site, as shown in Table 2. The concentrations detected in these two borings, AH-1 and AH-2, were the highest levels of contamination in comparison to the other areas analyzed under this investigation. AH-1 had the highest concentrations of all compounds listed in Table 2, except PCP. Analytical results reveal that PCP was only detected at AH-2 but the CUO for PCP was not exceeded at this location. Contaminants were detected at borings AH-3 through AH-9 but at significantly lower levels and well below the CUOs.

Dioxin was detected in both the sample and the duplicate sample at boring AH-5. The results show that dioxin levels within the drainage swale are well below the dioxin CUO for the site. Results for dioxin are included in Table 2.

RECOMMENDATIONS/CONCLUSION

The analytical results of this investigation were used to determine the extent of soil contamination remaining at the JW site. Most of the JW site has undergone extensive excavation to remove the soil contamination; however, site characteristics, such as subgrade utilities and railroad infrastructure, have restricted excavation in several of the areas evaluated under this investigation. Recommendations for future remedial actions that can be implemented in each contaminated area follow.

22nd Street

Based on the analytical results, residual contamination above the established CUOs exists on site along 22nd Street. Areas targeted for remediation include the low levels of benzo(a)-pyrene that were identified at borings SB1 and SB2, which are located along the property boundary at the westernmost railroad spur that crosses 22nd Street. Higher levels of contamination were identified for multiple compounds in the near-surface soils at borings SB9 through SB12, which are located along the central railroad spur. Subgrade utilities have prevented past remedial action along 22nd Street; however, results of this investigation revealed that the contamination in these areas appears to be isolated to the first 2 feet of near-surface soil. Shallow excavation is recommended for contaminated areas along the railroad spurs at 22nd Street and should be performed by hand in order to avoid existing utilities. The estimated excavation area along the westernmost spur is approximately 60 feet long by 20 feet wide. An additional 60-foot by 30-foot area will also be excavated along the central railroad spur in the vicinity of borings SB9 through SB12. The total volume of contaminated soil expected to be removed from 22nd Street is approximately 220 cubic yards. The excavated soil can be disposed of at the off-site landfill and used as daily cover. Potential excavation limits are delineated on Figure 2.

Samples collected from borings SB3 through SB8 showed no exceedances of CUOs and future engineering remedial measures or monitoring at these locations is unnecessary at this time.

The highest levels of contamination along 22nd Street were observed at soil boring SB17, which is in the vicinity of the 22nd Street Lagoon. Contamination exceeded CUOs at this location for all compounds except PCP. Additional exceedances of CUOs were also observed at borings SB13 and SB15, which are adjacent to the 22nd Street Lagoon. This area has been excavated as far as physically possible and further digging is obstructed by a subgrade and overhead utilities. Based on the utilities in this area, the suggested remedial action is institutional controls (ICs) and soils monitoring. Figure 2 shows the boundaries for the proposed ICs.

West Side Alley

Soil concentrations in samples collected along the alley near the PCP process area did not exceed CUOs for the JW site. No further soil remedial actions are required in this area.

Drainage Swale North of Area H

Soil contamination was identified in an isolated area within the drainage swale near Area H at borings AH-1 and AH-2. Since the levels of contamination exceeding CUOs appear to be limited to the drainage ditch, it is EEEI's recommendation that the area around AH-1 and AH-2 be excavated to a minimum depth of 2.5 feet to prevent further contamination throughout the swale. The estimated excavation area is approximately 100 feet in length by 20 feet in width; a total volume of 185 cubic yards of contaminated soil will be removed from the drainage swale and disposed of off site. After the area is excavated, it should be

backfilled and graded to maintain the current drainage and covered with a high-density polyethylene (HDPE) liner and riprap to match existing conditions and prevent erosion.

Prior to backfilling, confirmation sampling will be performed to determine compliance with the CUOs. In the event that CUOs are not achieved, ICs will be placed on this area. Figure 2 presents the proposed boundaries for the ICs should the confirmation samples indicate contaminant concentrations above their respective CUOs.

If you should have any questions or require additional information, please do not hesitate to contact me at 312/578-9243 or by e-mail at nbrown@ene.com.

Sincerely,

ECOLOGY & ENVIRONMENT ENGINEERING, INC.

Neil J. Brown, P.E.
Project Manager

cc: E. Rednour (Illinois EPA)
T. McFate (BESI)

Table 1 **Summary of Analysis**
2008 Field Sampling Plan
Jennison-Wright Superfund Site
Granite City, Illinois

Boring No.	Total Depth (feet BGS)	Sample Interval (feet BGS) 1	2	3	4	Analysis
SOIL SAMPLING						
Geoprobe Samples						
SB-1	4	1 to 2	Base	N/A	N/A	SVOC
SB-2	4	1 to 2	Base	N/A	N/A	SVOC
SB-3	4	1 to 2	Base	N/A	N/A	SVOC
SB-4	4	1 to 2	Base	N/A	N/A	SVOC
SB-5	4	1 to 2	Base	N/A	N/A	SVOC
SB-6	4	1 to 2	Base	N/A	N/A	SVOC
SB-7	4	1 to 2	Base	N/A	N/A	SVOC
SB-8	4	1 to 2	Base	N/A	N/A	SVOC
SB-9	4	1 to 2	Base	N/A	N/A	SVOC
SB-10	4	1 to 2	Base	N/A	N/A	SVOC
SB-11	4	1 to 2	Base	N/A	N/A	SVOC
SB-12	4	1 to 2	Base	N/A	N/A	SVOC
SB-13	4	1 to 2	Base	N/A	N/A	SVOC
SB-13 Duplicate	4	1 to 2	Base	N/A	N/A	SVOC
SB-14	4	1 to 2	Base	N/A	N/A	SVOC
SB-15	4	1 to 2	Base	N/A	N/A	SVOC
SB-16	4	1 to 2	Base	N/A	N/A	SVOC
SB-17	GWT	1 to 2	5 to 6	9 to 10	Base	SVOC
SB-18	GWT	1 to 2	5 to 6	9 to 10	Base	SVOC
SB-19	GWT	1 to 2	5 to 6	9 to 10	Base	SVOC, VOC, Dioxin
SB-20	GWT	1 to 2	5 to 6	9 to 10	Base	SVOC
SB-21	GWT	1 to 2	5 to 6	9 to 10	Base	SVOC
SB-22	GWT	1 to 2	5 to 6	9 to 10	Base	SVOC
SB-23	GWT	1 to 2	5 to 6	9 to 10	Base	SVOC
Hand Augers						
AH-1	3	1 to 2	N/A	N/A	N/A	SVOC
AH-2	3	1 to 2	N/A	N/A	N/A	SVOC
AH-3	3	1 to 2	N/A	N/A	N/A	SVOC
AH-4	3	1 to 2	N/A	N/A	N/A	SVOC
AH-5	3	1 to 2	N/A	N/A	N/A	SVOC, VOC, Dioxin
AH-5 Duplicate	3	1 to 2	N/A	N/A	N/A	SVOC, VOC, Dioxin
AH-6	3	1 to 2	N/A	N/A	N/A	SVOC
AH-7	3	1 to 2	N/A	N/A	N/A	SVOC
AH-8	3	1 to 2	N/A	N/A	N/A	SVOC
AH-9	3	1 to 2	N/A	N/A	N/A	SVOC

Key:

BGS = Below ground surface.
N/A = Not applicable.
SVOC = Semivolatile organic compound.
GWT = Groundwater table (assumed to be 16 to 18 feet BGS).
VOC = Volatile organic compound.

Table 2 Soil Investigation Analytical Results

Sample ID			SB1 (1-2)		SB1 (3-4)		SB2 (1-2)		SB2 (3-4)		SB3 (1-2)		SB3 (3-4)		SB4 (1-2)		SB4 (3-4)		SB5 (1-2)	
Depth Interval (feet)			1-2		3-4		1-2		3-4		1-2		3-4		1-2		3-4		1-2	
Date Sampled	Unit	CUO	11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008	
Naphthalene	ppb	27,000	160	U	39	U	320		37	U	120	J	38	U	120		67		39	J
Pentachlorophenol	ppb	51,000	3,300	U	790	U	4,000	U	750	U	2,900	U	770	U	780	U	750	U	3,000	U
Carbazole	ppb	954,000	960		200	U	990	U	190	U	230	J	190	U	170	J	190	U	750	U
Benzo(a)anthracene	ppb	14,000	2,600		39	U	1,000		8.3	J	780		38	U	680		240		180	
Benzo(b)fluoranthene	ppb	22,000	2,700		39	U	3,500		19	J	2,300		38	U	1,800		640		330	
Benzo(k)fluoranthene	ppb	32,000	1,800		39	U	1,300		10	J	1,400		38	U	940		570		120	J
Benzo(a)pyrene	ppb	2,000	2,500		39	U	2,200		16	J	1,500		38	U	1,400		500		230	
Indeno(1,2,3-cd)pyrene	ppb	11,000	1,400		39	U	2,100		19	J	1,700		38	U	1,700		530		190	
Dibenzo(a,h)anthracene	ppb	2,000	520		39	U	640		9.0	J	590		38	U	610		190		67	J
Dioxin	µg/kg	1	NS		NS		NS		NS		NS		NS		NS		NS		NS	

Sample ID			SB5 (3-4)		SB6 (1-2)		SB6 (3-4)		SB7 (1-2)		SB7 (3-4)		SB8 (1-2)		SB8 (3-4)		SB9 (1-2)		SB9 (3-4)	
Depth Interval (feet)			3-4		1-2		3-4		1-2		3-4		1-2		3-4		1-2		3-4	
Date Sampled	Unit	CUO	11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008	
Naphthalene	ppb	27,000	38	U	39	U	38	U	150		38	U	39	J	36	U	870		39	U
Pentachlorophenol	ppb	51,000	780	U	790	U	780	U	2,900	U	770	U	800	U	730	U	7,300	U	790	U
Carbazole	ppb	954,000	190	U	180	J	190	U	300	J	190	U	200	U	180	U	3,000		200	U
Benzo(a)anthracene	ppb	14,000	38	U	530		38	U	1,100		38	U	480		11	J	15,000		10	J
Benzo(b)fluoranthene	ppb	22,000	38	U	1,600		38	U	3,200		38	U	1,100		19	J	28,000		28	J
Benzo(k)fluoranthene	ppb	32,000	38	U	720		38	U	1,500		38	U	740		22	J	26,000		12	J
Benzo(a)pyrene	ppb	2,000	38	U	1,300		38	U	2,000		38	U	890		24	J	18,000		18	J
Indeno(1,2,3-cd)pyrene	ppb	11,000	38	U	1,500		9.0	J	2,200		38	U	750		22	J	21,000		20	J
Dibenzo(a,h)anthracene	ppb	2,000	38	U	550		38	U	740		38	U	320		36	U	3,600		39	U
Dioxin	µg/kg	1	NS		NS		NS		NS		NS		NS		NS		NS		NS	

Key at end of table.

Table 2 Soil Investigation Analytical Result (Cont.)

Sample ID			SB10 (1-2)	SB10 (3-4)	SB11 (1-2)	SB11 (3-4)	SB12 (1-2)	SB12 (3-4)	SB13 (1-2)	SB13 (3-4)	SB13D (1-2)
Depth Interval (feet)			1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2
Date Sampled	Unit	CUO	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008
Naphthalene	ppb	27,000	130	38 U	890	53	640	39 U	400	44	570
Pentachlorophenol	ppb	51,000	740 U	760 U	7,800 U	750 U	6,900 U	790 U	7,200 U	710 U	7,400 U
Carbazole	ppb	954,000	150 J	190 U	2,100	57 J	1,500 J	200 U	1,400 J	75 J	1,300 J
Benzo(a)anthracene	ppb	14,000	350	38 U	10,000	430	28,000	11 J	28,000	660	39,000
Benzo(b)fluoranthene	ppb	22,000	810	9.0 J	25,000	1,100	55,000	32 J	24,000	610	47,000
Benzo(k)fluoranthene	ppb	32,000	420	38 U	9,500	460	20,000	10 J	17,000	440	21,000
Benzo(a)pyrene	ppb	2,000	490	8.0 J	15,000	740	37,000	24 J	26,000	610	37,000
Indeno(1,2,3-cd)pyrene	ppb	11,000	740	10 J	24,000	610	25,000	37 J	16,000	370	19,000
Dibenzo(a,h)anthracene	ppb	2,000	230	38 U	7,100	210	16,000	22 J	8,500	78	9,700
Dioxin	µg/kg	1	NS	NS	NS	NS	NS	NS	NS	NS	NS

Sample ID			SB13D (3-4)	SB14 (1-2)	SB14 (3-4)	SB15 (1-2)	SB15 (2-3)	SB16 (1-2)	SB16 (3-4)	SB17 (1-2)	SB17 (5-6)
Depth Interval (feet)			3-4	1-2	3-4	1-2	2-3	1-2	3-4	1-2	5-6
Date Sampled	Unit	CUO	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/19/2008	11/19/2008
Naphthalene	ppb	27,000	49	15 J	1,300	570	63	120	430	2,400	91,000
Pentachlorophenol	ppb	51,000	740 U	730 U	800 U	7,400 U	810 U	730 U	8,000 U	800 J	25,000 J
Carbazole	ppb	954,000	110 J	180 U	170 J	560 J	71 J	98 J	2,000 U	1,500	64,000
Benzo(a)anthracene	ppb	14,000	930	98	98	20,000	1,100	880	3,100	2,100	96,000
Benzo(b)fluoranthene	ppb	22,000	950	130	130	20,000	1,000	1,100	3,800	7,400	120,000
Benzo(k)fluoranthene	ppb	32,000	430	85	85	13,000	610	930	3,000	2,700	50,000
Benzo(a)pyrene	ppb	2,000	860	110	110	19,000	1,000	1,000	3,400	5,300	93,000
Indeno(1,2,3-cd)pyrene	ppb	11,000	560	92	92	14,000	460	740	2,800	6,400	62,000
Dibenzo(a,h)anthracene	ppb	2,000	220	38	38	5,300	140	310	1,300	2,200	16,000
Dioxin	µg/kg	1	NS	NS	NS	NS	NS	NS	NS	NS	NS

Key at end of table.

Table 2 Soil Investigation Analytical Result (Cont.)

Sample ID			SB17 (9-10)		SB17 (15-16)		SB18 (1-2)		SB18 (5-6)		SB18 (9-10)		SB18 (13-14)		SB19 (1-2)	
Depth Interval (feet)			9-10		15-16		1-2		5-6		9-10		13-14		1-2	
Date Sampled	Unit	CUO	11/19/2008		11/19/2008		11/19/2008		11/19/2008		11/19/2008		11/19/2008		11/19/2008	
Naphthalene	ppb	27,000	1,600,000		9,600,000		130		41	U	35	U	43	U	43	U
Pentachlorophenol	ppb	51,000	84,000	U	300,000	U	830	U	830	U	720	U	870	U	870	U
Carbazole	ppb	954,000	160,000		430,000		100	J	210	U	180	U	220	U	220	U
Benzo(a)anthracene	ppb	14,000	87,000		490,000		600		10	J	35	U	43	U	43	U
Benzo(b)fluoranthene	ppb	22,000	55,000		330,000		720		24	J	35	U	43	U	43	U
Benzo(k)fluoranthene	ppb	32,000	25,000		140,000		490		41	U	35	U	43	U	43	U
Benzo(a)pyrene	ppb	2,000	42,000		230,000		560		13	J	35	U	43	U	43	U
Indeno(1,2,3-cd)pyrene	ppb	11,000	15,000		86,000		340		19	J	35	U	43	U	43	U
Dibenzo(a,h)anthracene	ppb	2,000	4,800		27,000		160		41	U	35	U	43	U	43	U
Dioxin	µg/kg	1	NS		NS		0.0680		0.0730		0.0580		0.0740		NS	

Sample ID			SB19 (5-6)		SB19 (9-10)		SB19 (13-14)		SB20 (1-2)		SB20 (5-6)		SB20 (9-10)		SB20 (12-13)	
Depth Interval (feet)			5-6		9-10		13-14		1-2		5-6		9-10		12-13	
Date Sampled	Unit	CUO	11/19/2008		11/19/2008		11/19/2008		11/19/2008		11/19/2008		11/19/2008		11/19/2008	
Naphthalene	ppb	27,000	39	U	41	U	13	J	27	J	38	U	35	U	40	U
Pentachlorophenol	ppb	51,000	790	U	830	U	830	U	810	U	770	U	710	U	810	U
Carbazole	ppb	954,000	200	U	210	U	210	U	42	J	190	U	180	U	200	U
Benzo(a)anthracene	ppb	14,000	39	U	41	U	41	U	420		38	U	35	U	40	U
Benzo(b)fluoranthene	ppb	22,000	39	U	41	U	41	U	480		38	U	35	U	40	U
Benzo(k)fluoranthene	ppb	32,000	39	U	41	U	41	U	220		38	U	35	U	40	U
Benzo(a)pyrene	ppb	2,000	39	U	41	U	41	U	370		38	U	35	U	40	U
Indeno(1,2,3-cd)pyrene	ppb	11,000	39	U	41	U	41	U	210		38	U	35	U	40	U
Dibenzo(a,h)anthracene	ppb	2,000	39	U	41	U	41	U	85		38	U	35	U	40	U
Dioxin	µg/kg	1	NS		NS		NS		NS		NS		NS		NS	

Key at end of table.

Table 2 Soil Investigation Analytical Result (Cont.)

Sample ID			SB21 (1-2)	SB21 (5-6)	SB21 (9-10)	SB21 (12-13)	SB22 (1-2)	SB22 (5-6)	SB22 (9-10)
Depth Interval (feet)			1-2	5-6	9-10	12-13	1-2	5-6	9-10
Date Sampled	Unit	CUO	11/20/2008	11/20/2008	11/20/2008	11/20/2008	11/19/2008	11/19/2008	11/19/2008
Naphthalene	ppb	27,000	270	45 U	38 U	21 J	11 J	39 U	40 U
Pentachlorophenol	ppb	51,000	780 U	910 U	760 U	850 U	810 U	800 U	820 U
Carbazole	ppb	954,000	120 J	230 U	190 U	210 U	200 U	200 U	200 U
Benzo(a)anthracene	ppb	14,000	570	45 U	38 U	22 J	40 U	39 U	40 U
Benzo(b)fluoranthene	ppb	22,000	1,000	11 J	38 U	86	10 J	39 U	40 U
Benzo(k)fluoranthene	ppb	32,000	770	45 U	38 U	31 J	40 U	39 U	40 U
Benzo(a)pyrene	ppb	2,000	890	11 J	38 U	62	40 U	39 U	40 U
Indeno(1,2,3-cd)pyrene	ppb	11,000	660	12 J	38 U	48	8.9 J	39 U	40 U
Dibenzo(a,h)anthracene	ppb	2,000	230	9.4 J	38 U	16 J	40 U	39 U	40 U
Dioxin	µg/kg	1	NS	NS	NS	NS	NS	NS	NS

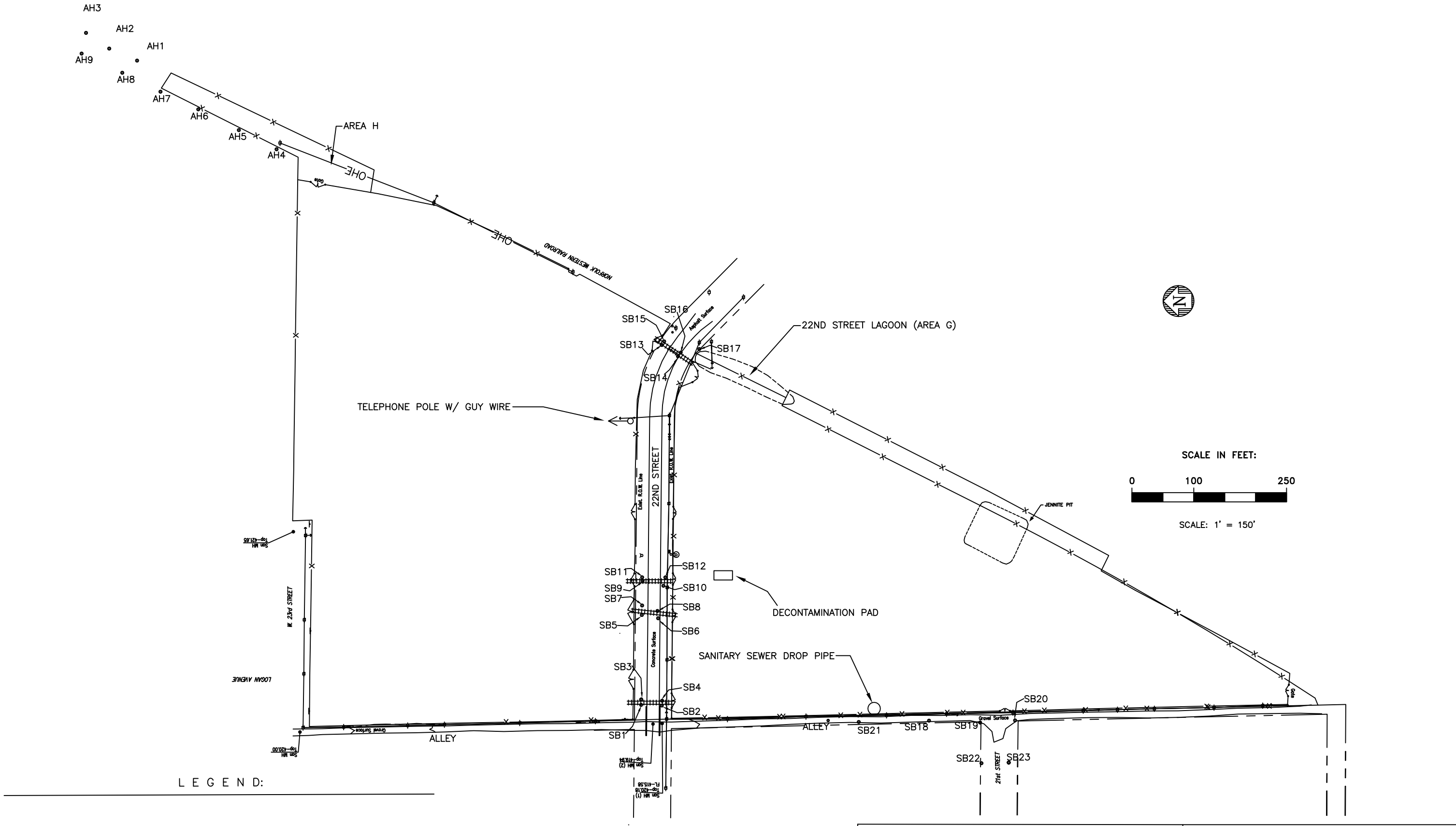
Sample ID			SB22 (12-13)	SB23 (1-2)	SB23 (5-6)	SB23 (9-10)	SB23 (12-13)	AH-1	AH-2
Depth Interval (feet)			12-13	1-2	5-6	9-10	12-13	1-2	1-2
Date Sampled	Unit	CUO	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/19/2008	11/20/2008	11/20/2008
Naphthalene	ppb	27,000	42 U	150	37 U	190	110	81,000,000	61,000
Pentachlorophenol	ppb	51,000	860 U	750 U	750 U	720 U	870 U	1,600,000 U	12,000 J
Carbazole	ppb	954,000	220 U	190 U	190 U	180 U	220 U	26,000,000	15,000
Benzo(a)anthracene	ppb	14,000	42 U	300	37 U	35 U	43 U	3,400,000	82,000
Benzo(b)fluoranthene	ppb	22,000	42 U	420	37 U	35 U	43 U	2,100,000	240,000
Benzo(k)fluoranthene	ppb	32,000	42 U	210	37 U	35 U	43 U	1,200,000	100,000
Benzo(a)pyrene	ppb	2,000	42 U	300	37 U	35 U	43 U	1,700,000	150,000
Indeno(1,2,3-cd)pyrene	ppb	11,000	42 U	170	37 U	35 U	43 U	720,000	120,000
Dibenzo(a,h)anthracene	ppb	2,000	42 U	76	37 U	35 U	43 U	260,000	62,000
Dioxin	µg/kg	1	NS	NS	NS	NS	NS	NS	NS

Key at end of table.

Table 2 Soil Investigation Analytical Result (Cont.)

Sample ID			AH-3	AH-4	AH-5	AH-5DUP	AH-6	AH-7	AH-8	AH-9
Depth Interval (feet)			1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2
Date Sampled	Unit	CUO	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008
Naphthalene	ppb	27,000	180	41 U	40 U	42 U	30 J	38 U	39 U	38 U
Pentachlorophenol	ppb	51,000	960	840 U	810 U	860 U	840 U	770 U	790 U	760 U
Carbazole	ppb	954,000	330	210 U	200 U	210 U	210 U	190 U	200 U	190 U
Benzo(a)anthracene	ppb	14,000	540	41 U	16 J	13 J	38 J	11 J	39 U	14 J
Benzo(b)fluoranthene	ppb	22,000	1,700	32 J	35 J	43	97	19 J	11 J	29 J
Benzo(k)fluoranthene	ppb	32,000	670	17 J	13 J	19 J	45	11 J	39 U	11 J
Benzo(a)pyrene	ppb	2,000	800	15 J	17 J	18 J	48	13 J	39 U	16 J
Indeno(1,2,3-cd)pyrene	ppb	11,000	1,600	26 J	19 J	30 J	57	10 J	39 U	12 J
Dibenzo(a,h)anthracene	ppb	2,000	270	41 U	40 U	9.2 J	17 J	38 U	39 U	38 U
Dioxin	µg/kg	1	NS	NS	0.0730	0.0730	NS	NS	NS	NS

Key:
J = Approximate value.
U = Not detected.
NS = Not sampled.
CUO = Cleanup objective.
Ppb = Parts per billion.
µg/kg = Milligrams per kilogram.
Concentration above CUOs.



L E G E N D:

– SOIL SAMPLE LOCATION

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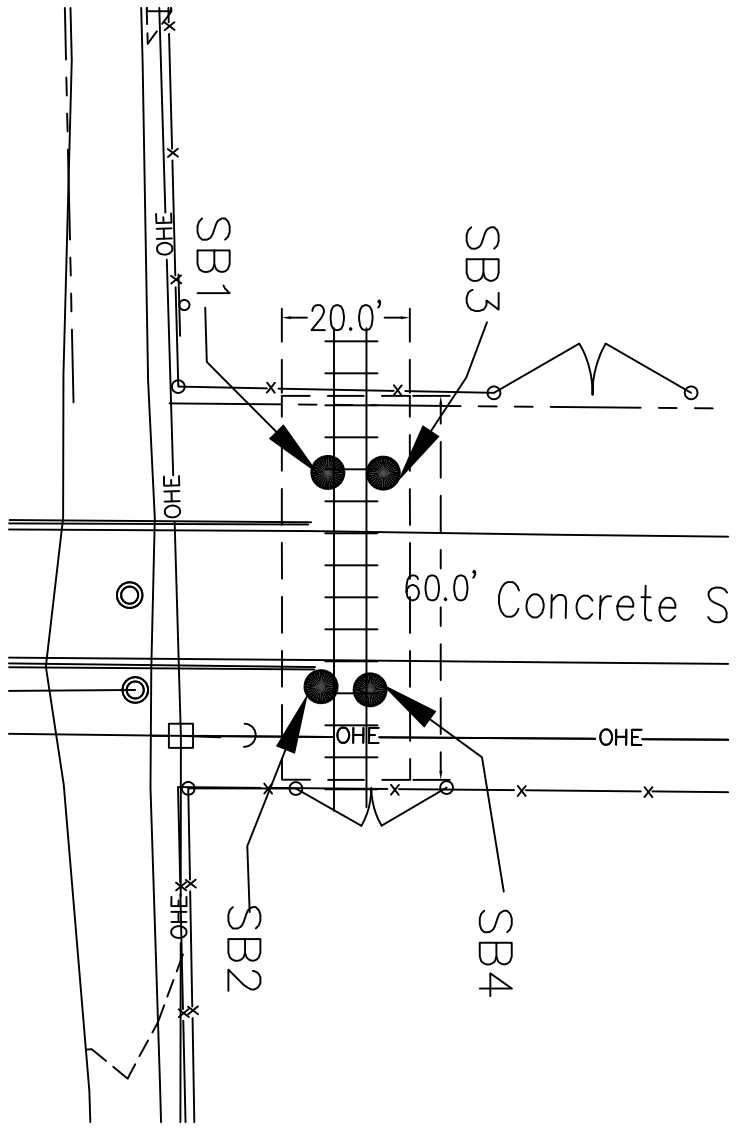
FIGURE 1
2008 SOIL SAMPLE LOCATION

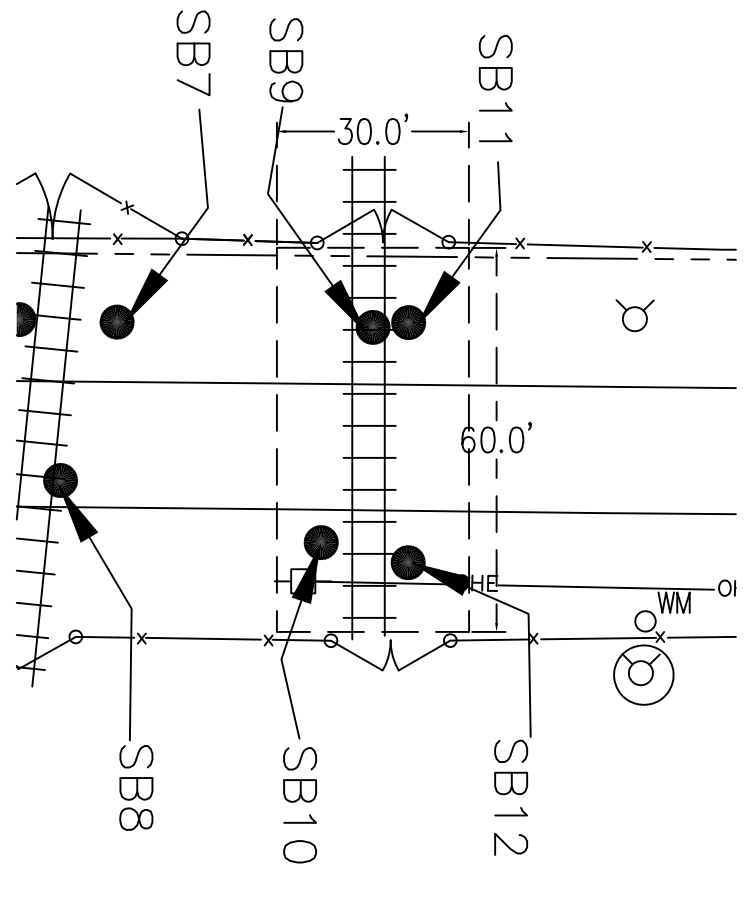
JENNISON–WRIGHT SITE
GRANITE CITY, ILLINOIS

DESIGNED BY	CHECKED BY
T. CAMPBELL	J. JENKINS
DRAWN BY	APPROVED BY
V.GEE	N. BROWN

SCALE	DATE ISSUED	C.A.D. FILE NO.	DRAWING NO.	REV.
SEE ABOVE	01/2009	IE1P_GP_FSP 012109	1	



SCALE: 1' = 30'



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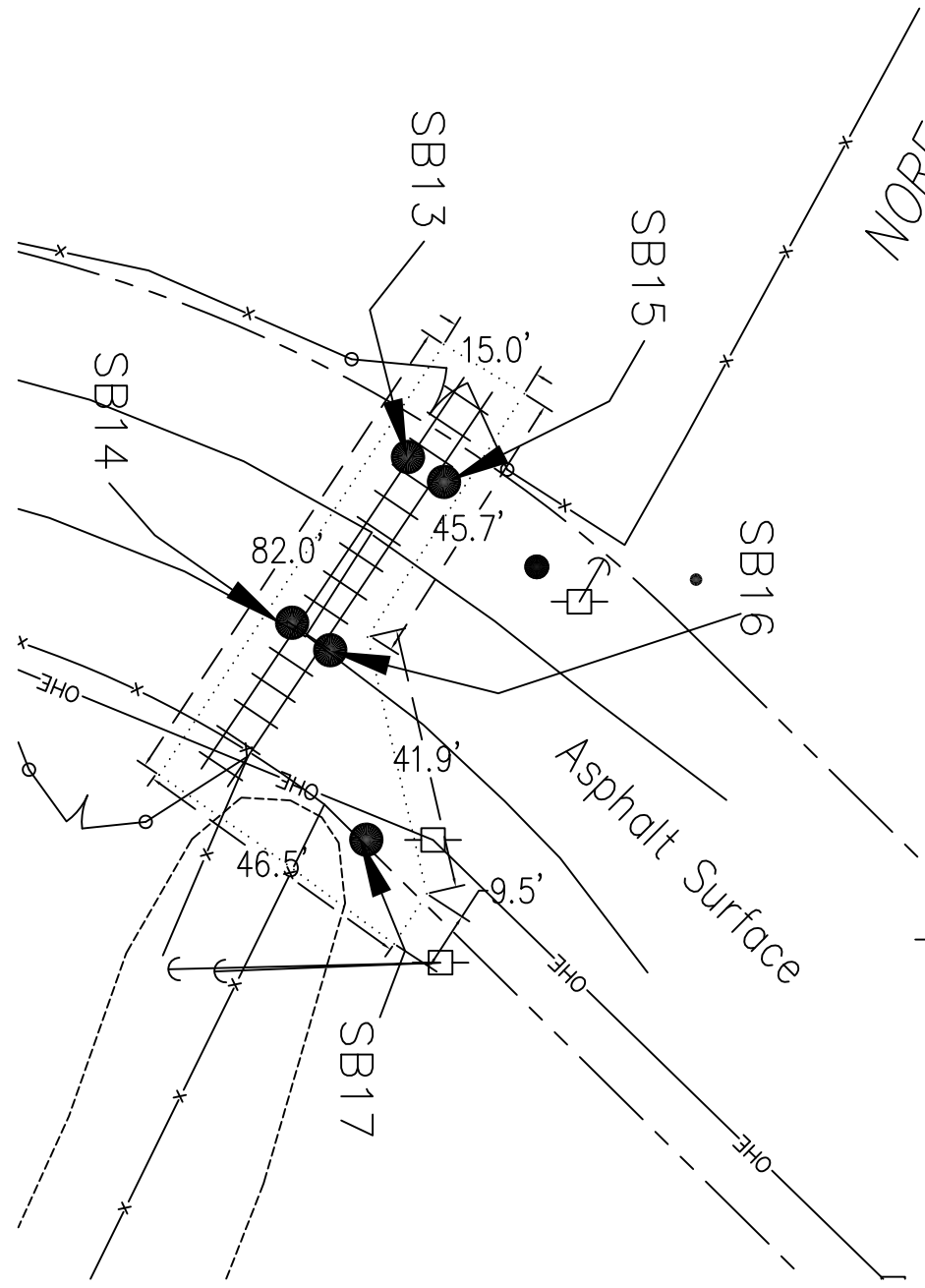
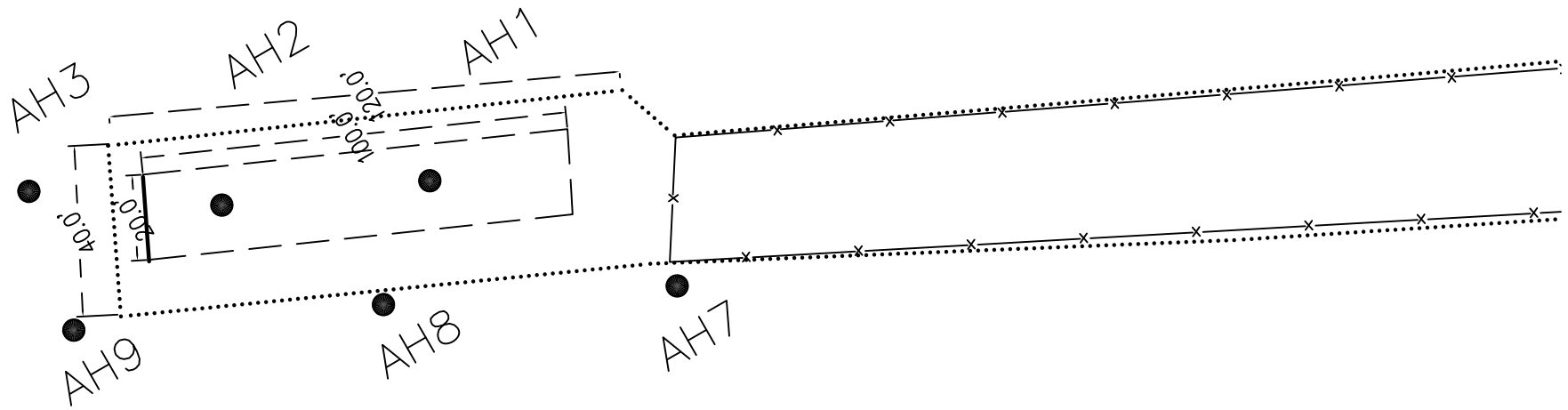


SCALE: 1' = 30'



SCALE: 1' = 40'

L E G E N D:

- SOIL SAMPLE LOCATION
- PROPOSED SOIL REMOVAL
- INSTITUTIONAL CONTROLS

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FIGURE 2
PROPOSED SOIL REMEDIATION

DESIGNED BY	CHECKED BY		
T. CAMPBELL	J. JENKINS		
DRAWN BY	APPROVED BY		
V.GEE	N. BROWN		

JENNISON–WRIGHT SITE
GRANITE CITY, ILLINOIS

SCALE	DATE ISSUED	C.A.D. FILE NO.	DRAWING NO.	REV.
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